Rec'd PCT/PTO 09 JUN 2005

(54) Title: COMPUTER VISION SYSTEM AND METHOD EMPLOYING ILLUMINATION INVARIANT NEURAL NETWORKS
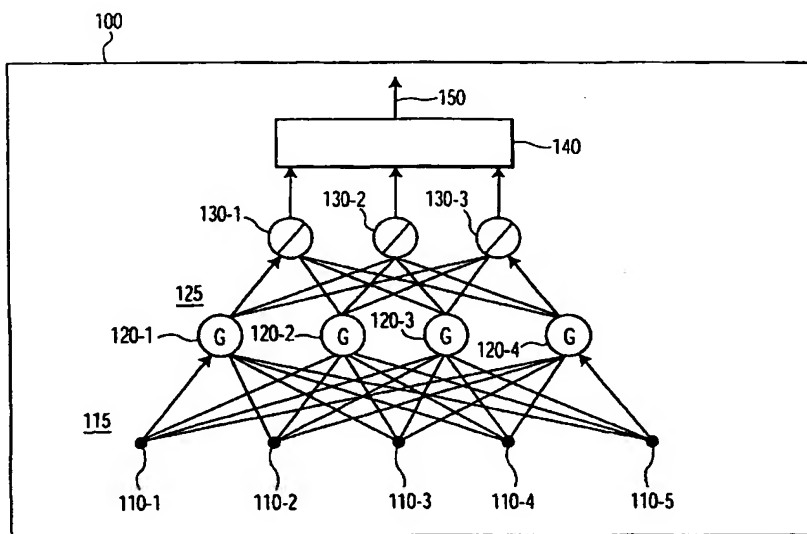
(57) Abstract: Objects are classified using a normalized cross correlation (NCC) measure to compare two images acquired under non-uniform illumination conditions. An input pattern is classified to assign a tentative classification label and value. The input pattern is assigned to an output node in the radial basis function network having the largest classification value. If the input pattern and an image associated with the node, referred to as a node image, both have uniform illumination, then the node image is accepted and the probability is set above a user specified threshold. If the test image or the node image are not uniform, then the node image is not accepted and the classification value is kept as the value assigned by the classifier. If both the test image and the node image are not uniform, then an NCC measure is used and the classification value is set as the NCC value.

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INTERNATIONAL SEARCH REPORT

PCT/IB 03/05747

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7   G06K9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7   G06K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BRUNELLI R ET AL: "FACE RECOGNITION: FEATURES VERSUS TEMPLATES" IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, IEEE INC. NEW YORK, US, vol. 15, no. 10, 1 October 1993 (1993-10-01), pages 1042-1052, XP000403523 ISSN: 0162-8828 abstract; page 1043-1044, section II.A. "Normalization"; page 1046, last paragraph, continued on page 1047, Fig.10; page1047, last paragraph; page1048, last paragraph, continued on page 1049, Fig.19 _____ -/--	1-5, 13-17,23

[X] Further documents are listed in the continuation of box C.   [X] Patent family members are listed in annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
25 May 2004	17/06/2004

Name and mailing address of the ISA	Authorized officer
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 842 194 A (ARBUCKLE THOMAS D) 24 November 1998 (1998-11-24) the whole document	1-23
A	US 5 239 594 A (YODA FUMIO) 24 August 1993 (1993-08-24) the whole document	1-23
A	EGMONT-PETERSEN M ET AL: "Image processing with neural networks-a review" PATTERN RECOGNITION, PERGAMON PRESS INC. ELMSFORD, N.Y, US, vol. 35, no. 10, October 2002 (2002-10), pages 2279-2301, XP004366785 ISSN: 0031-3203 the whole document	1-23

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5842194	A	24-11-1998	NONE	
US 5239594	A	24-08-1993	JP 4288663 A	13-10-1992